

### Remarks

By this Amendment, Applicants have submitted a new set of claims to more clearly recite the inventive casting apparatus and fill tube assembly. Applicants have determined that a fill tube having a tapered flange at its mold engaging end provides a substantially leak free engagement to the casting mold when contacted by an annular ring that induces a force on the tapered flange of the fill tube. More specifically, with reference to Figure 3 of Applicant's disclosure, Applicants' fill tube and clamping assembly include a clamping plate 84 disposed over the fill tube 58 (tubular member), wherein the clamping plate 84 biases the load ring 78 (annular ring) against the flange 68. Referring to Figure 3 and Paragraph 0045 of Applicant's disclosure, the load ring 78 is clearly described as having a surface engaging the flange 68.

New Claim 23 recites a casting fill tube assembly that includes an **annular ring disposed over the fill tube and having a surface engaging the tapered flare of the second end of the tubular member**. New Claim 33 recites a casting apparatus including an **annular load ring disposed over the fill tube and having a taper corresponding to the tapered flange of the mold engaging end of the fill tube**. Support for newly added Claims 23-38 is found in original Claims 1-19. Accordingly, it is respectfully submitted that the casting tube and casting apparatus, as now claimed, more clearly describes the benefits obtained, which are not shown or suggested in the prior art. Thus, Applicants respectfully submit that the application is in condition for immediate allowance.

Turning now to the Office Action, Claims 1-3 stand rejected, under 35 U.S.C. 102(b), as allegedly being anticipated by U.S. Patent No. 4,962,455 to Redemske et al. ("Redemske et al."), U.S. Patent No. 4,982,777 to Chandley ("Chandley '777"), U.S. Patent No. 5,069,271 to Chandley ("Chandley '271"), U.S. Patent No. 5,146,973 to Chandley ("Chandley '973"), U.S. Patent No. 5,303,762 to Chandley ("Chandley '762"), and U.S. Patent No. 5,113,924 to Green et al. (Green et al.). Claims 4, 5, and 13 stand

rejected under 35 U.S.C. §102(b) as allegedly being anticipated by the Applicants' Admitted Prior Art (AAPA). Claims 4-9 and 13 stand rejected, under 35 U.S.C. §102(e), as allegedly anticipated by U.S. Patent No. 6,775,235 to Nedic ("Nedic"). Claims 10-12, and 14-19 stand rejected, under 35 U.S.C. 103(a), as allegedly being obvious over Nedic. Applicants respectfully disagree and submit the following.

It is axiomatic that anticipation under §102 requires the prior art reference to disclose every element to which it is applied. *In re King*, 801 F.2d 1324, 1326, 231 USPQ 36, 138 (Fed Cir, 1986). Thus, there must be no differences between the subject matter of the claim and the disclosure of the prior art reference. Stated another way, the reference must contain within its four corners adequate direction to practice the invention as claimed. The corollary of the rule is equally applicable: absence from the applied reference of any claimed element negates anticipation. *Kloster Speedsteel AB v. Crucible Inc.*, 793 F.2d 1565, 1571, 230 USPQ 81, 84 (Fed. Cir. 1986).

The applied prior art fails to anticipate Applicants' claimed fill tube assembly, since the applied prior art fails to disclose a clamping assembly comprising an annular ring disposed over the fill tube and having a surface engaging the tapered flare of the second end of the tubular member, and a clamping plate fastened to the casting mold to induce a compressive force on the annular ring, as recited in new Claim 23, or a casting apparatus including an annular load ring disposed over the fill tube and having a taper corresponding to the tapered flange of the mold engaging end of the fill tube, as recited in new Claim 33.

The forgoing remarks clearly demonstrate that the applied reference does not teach each and every aspect of the claimed invention as required by *King* and *Kloster Speedsteel; et. al.*, therefore the claims of the present application are not anticipated by the disclosure Redemske et al., Chandley '777, Chandley '271, Chandley '973, Chandley 762, Green et al., the AAPA or Nedic. Applicants respectfully submit that the instant §102 rejections has been obviated and withdrawal thereof is respectfully requested.

Turning to the rejection under §103, to establish a prima facie case of obviousness three criteria must be met. First there must be some suggestion or motivation, either in the references themselves or the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1543, 1457-58 (Fed. Cir. 1998). Second, there must be a reasonable expectation of success. *In re Merck & Co, Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Finally, the prior art reference (or references) combined must teach or suggest all of the claimed limitations. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).

Applicants submit that the Nedic fails to render Applicants' claimed fill tube assembly, as recited in new Claim 23, or casting apparatus, as recited in new Claim 33, unpatentable for the same reason that the reference fails to anticipate Applicants' claimed invention, under section §102, as described above. Specifically, Nedic fails to teach or suggest a clamping assembly comprising an annular ring disposed over the fill tube and having a surface engaging the tapered flare of the second end of the tubular member, and a clamping plate fastened to the casting mold to induce a compressive force on the annular ring, as recited in new Claim 23, or a casting apparatus including an annular load ring disposed over the fill tube and having a taper corresponding to the tapered flange of the mold engaging end of the fill tube, as recited in new Claim 33.

Referring to Page 4 of the present Office Action, the Examiner's admits that Nedic fails to disclose that the flange be of a tapered shape. The Examiner further alleges that the flange shape and arrangements of Nedic operate is substantially the same matter with the substantially the same result as the Applicant's claimed fill tube assembly or casting apparatus. Applicants respectfully disagree.

Referring to Figure 6 of the Nedic reference, Nedic disclose a gasket 72 disposed between a lower ring and the fill tube. Referring to Column 4, lines 60-64, of the Nedic reference, Nedic discloses that the compressed gasket 72 seals the fill tube to allow for

flow from the furnace and through the lower end 62 of the fill tube 52 into the mold 68 without leaking. Referring to Figure 3, Nedic does not include a single surface of which the ring contacts or engages the fill tube. Therefore, in addition to failing to disclose a fill tube having a tapered flange, the Nedic reference fails to teach or suggest an annular ring disposed over the fill tube and having a surface engaging the tapered flare of the second end of the tubular member, as recited in new Claim 23, or annular load ring disposed over the fill tube and having a taper corresponding to the tapered flange of the mold engaging end of the fill tube, as recited in new Claim 33. Additionally, the Applicant's claimed structure do not operate in the same manner or provide the same result, as alleged by the Examiner.

More importantly, Applicants' further note that there would be no motivation for one of ordinary skill in the art to modify the disclosure of Nedic to meet the limitations of Applicants' claims, since such modifications to remove the gasket 72 and enable the ring and fill tube assemblies taught in Nedic to contact one another would result in a fill tube assembly that would potentially leak. Further, the removal of gasket 72 from the Nedic structure would constitute a change in the structure's principle of operation. If the proposed modification would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

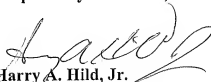
The §103 rejections also fail because there is no motivation in the applied references that suggests modifying the structures disclosed therein to include Applicants' claimed structure, which includes the features recited in new Claims 23 and 33. The rejections are thus improper since the prior art does not suggest this drastic modification. The law requires that a prior art reference provide some teaching, suggestion, or motivation to make the modification obvious. "The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification

obvious unless the prior art suggested the desirability of the modification.” In re Fritch, 972 F.2d, 1260,1266, 23 USPQ 1780,1783-84 (Fed. Cir. 1992).

Based on the above amendments and remarks, the §103 rejections citing Nedic has been obviated; therefore reconsideration and withdrawal of the instant rejections are respectfully requested.

Thus, in view of the foregoing amendments and remarks, it is firmly believed that the present case is in condition for allowance, which action is earnestly solicited.

Respectfully submitted,



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NUMBER \*\*08840\*\*